FIG. 1A

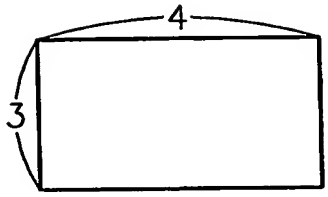


FIG. 1B

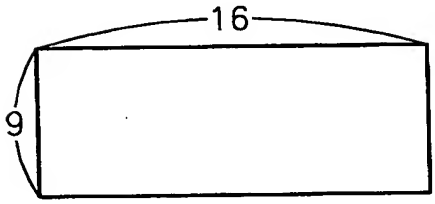


FIG. 2

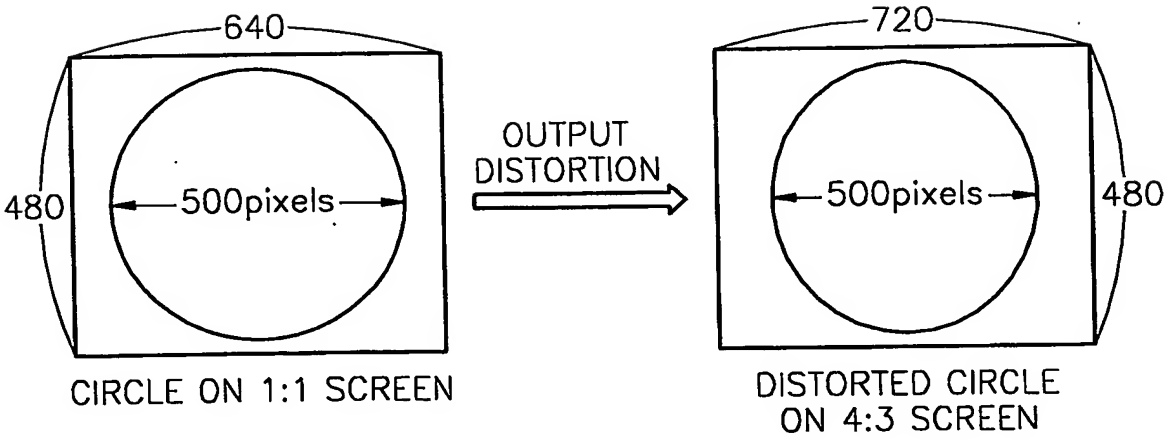
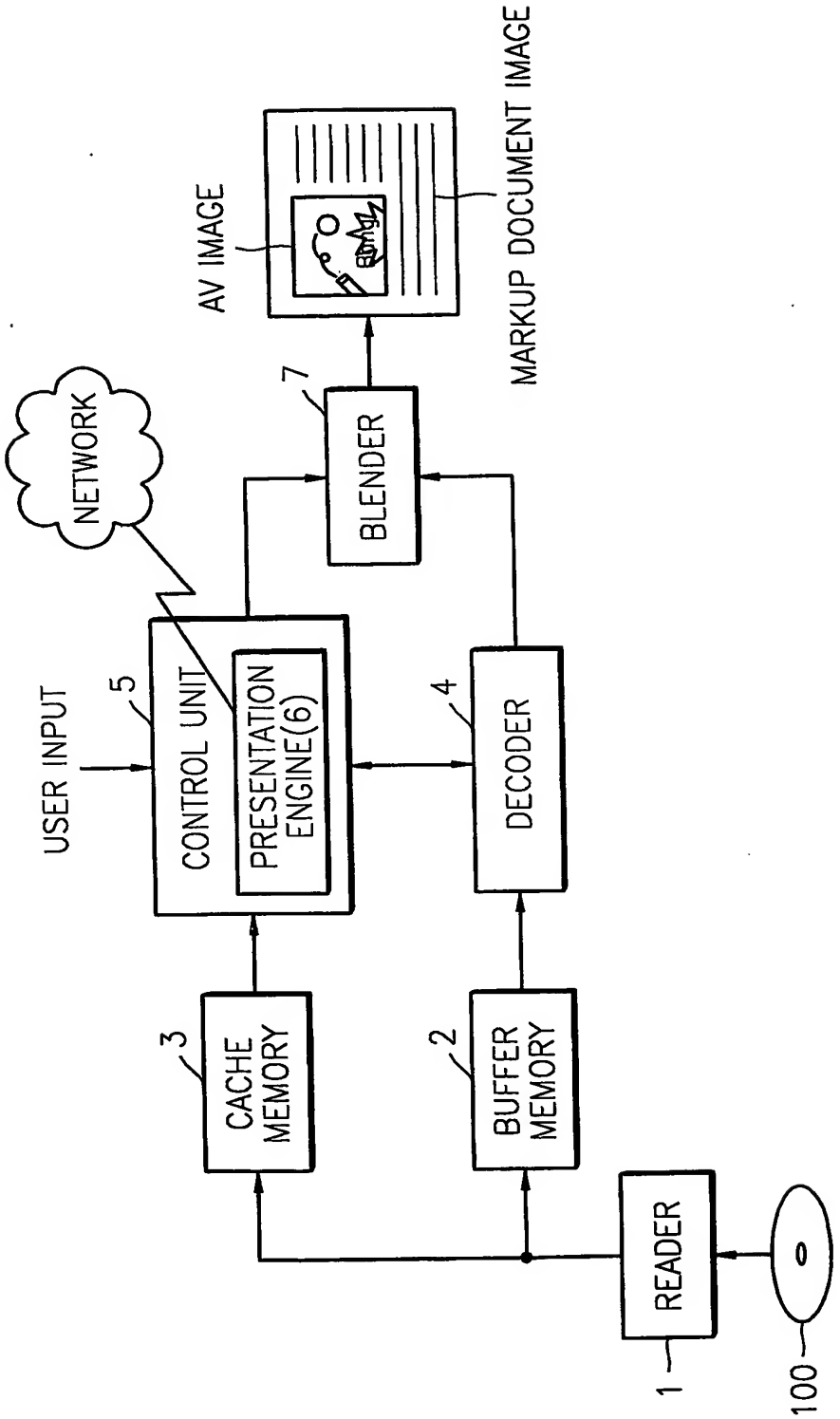


FIG. 3


MARKUP DOCUMENT IMAGE
AV IMAGE
NETWORK
7
BLENDER
USER INPUT
5
CONTROL UNIT
PRESENTATION ENGINE(6)
4
DECODER
3
CACHE MEMORY
2
BUFFER MEMORY
READER
1
100

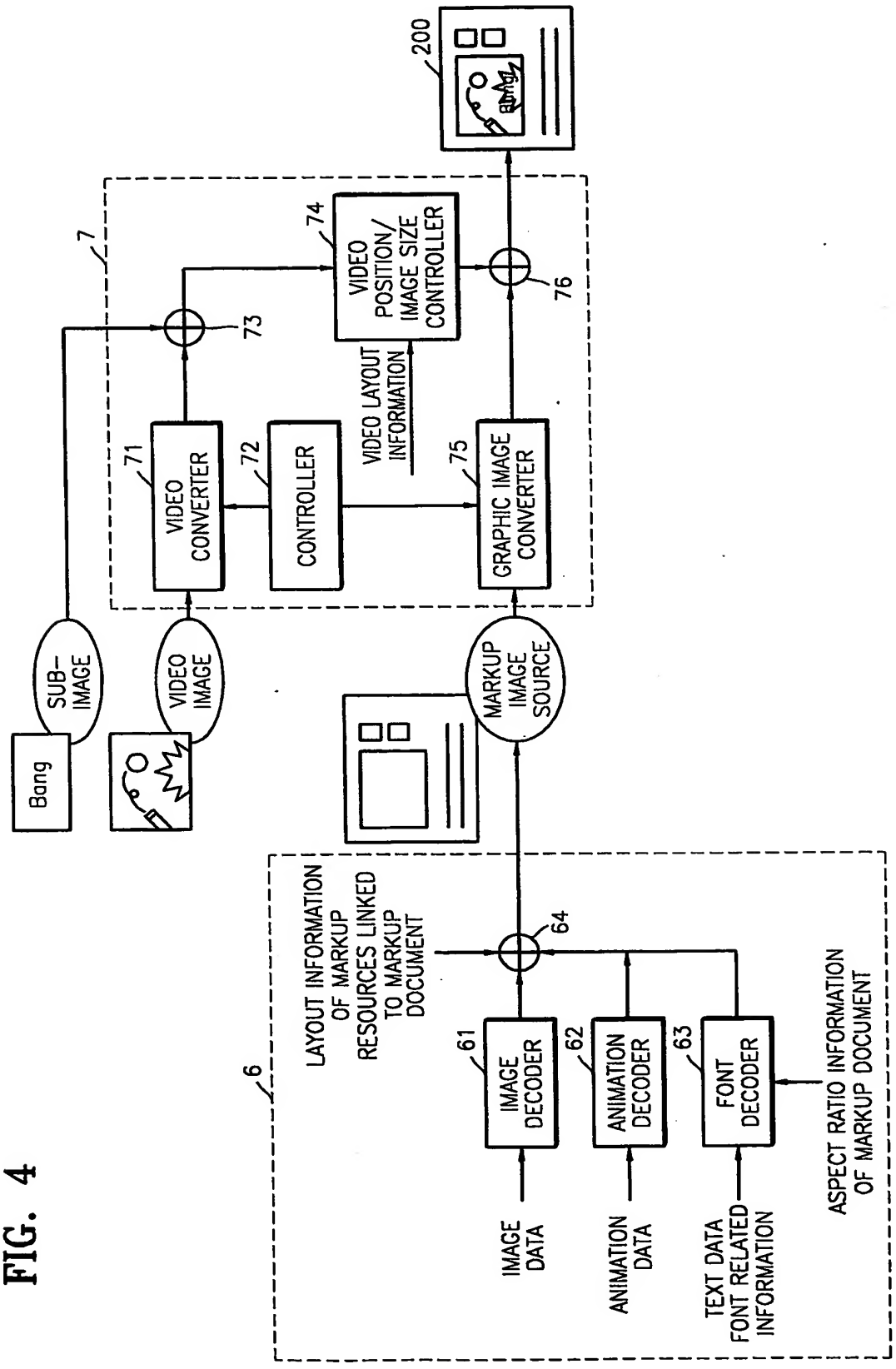

200
Bang
7
74
VIDEO POSITION/ IMAGE SIZE CONTROLLER
76
73
VIDEO LAYOUT INFORMATION
71
VIDEO CONVERTER
72
CONTROLLER
75
GRAPHIC IMAGE CONVERTER
SUB-IMAGE
VIDEO IMAGE
MARKUP IMAGE SOURCE
Bang
6
LAYOUT INFORMATION OF MARKUP
RESOURCES LINKED TO MARKUP DOCUMENT
64
61
IMAGE DECODER
62
ANIMATION DECODER
63
FONT DECODER
ASPECT RATIO INFORMATION OF MARKUP DOCUMENT
IMAGE DATA
ANIMATION DATA
TEXT DATA FONT RELATED INFORMATION

FIG. 4

FIG. 5

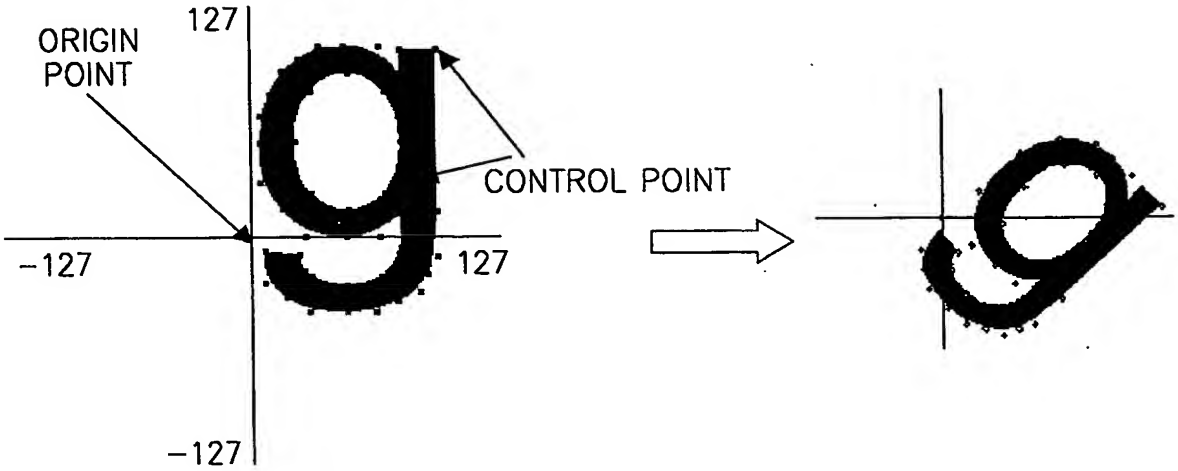


FIG. 6A

WHEN 1:1 FONT IS OUTPUT TO SCREEN HAVING PIXEL ASPECT RATIO OF 0.888:1 (I.E., SCREEN HAVING RESOLUTION OF 720x480 AND SCREEN ASPECT RATIO OF 4:3) WITHOUT BEING CONVERTED

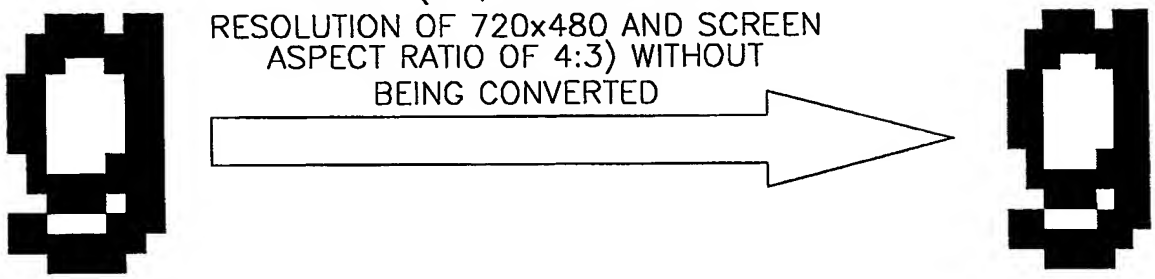


FIG. 6B

WHEN 1:1 FONT IS ENLARGED USING MATRIX INFORMATION AND THEN OUTPUT TO SCREEN HAVING PIXEL ASPECT RATIO OF 0.888:1 (I.E.,SCREEN HAVING RESOLUTION OF 720x480 AND SCREEN ASPECT RATIO OF 4:3)

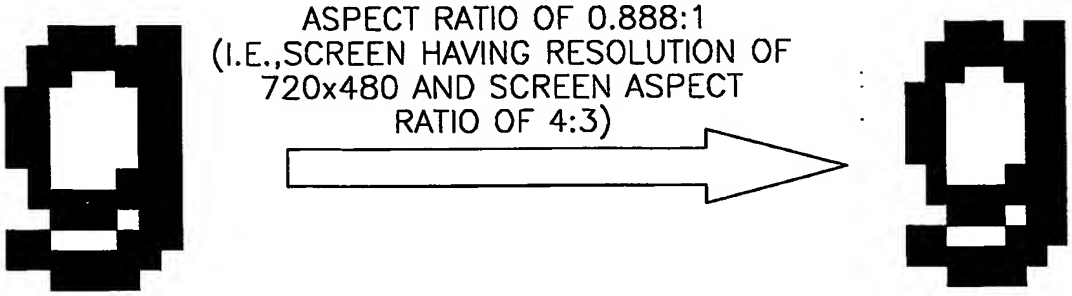


FIG. 7A

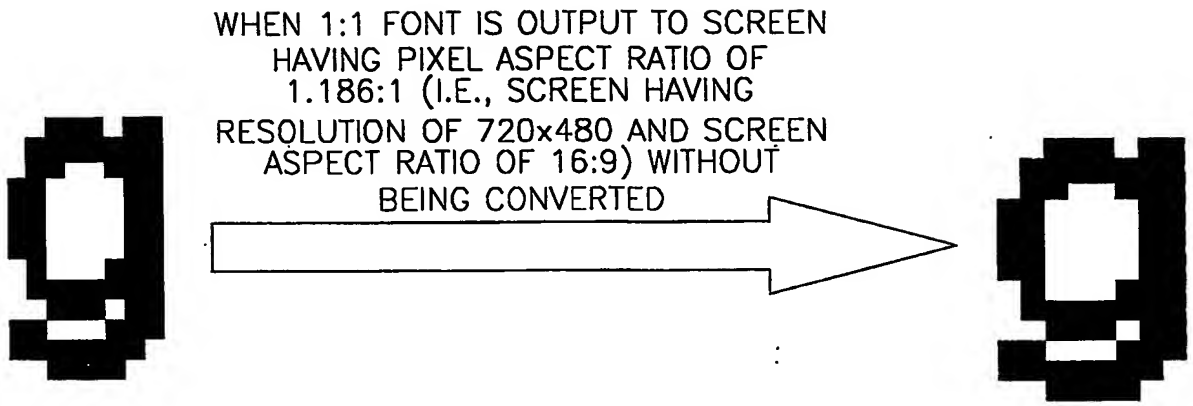

WHEN 1:1 FONT IS OUTPUT TO SCREEN HAVING PIXEL ASPECT RATIO OF 1.186:1 (I.E., SCREEN HAVING RESOLUTION OF 720x480 AND SCREEN ASPECT RATIO OF 16:9) WITHOUT BEING CONVERTED

FIG. 7B

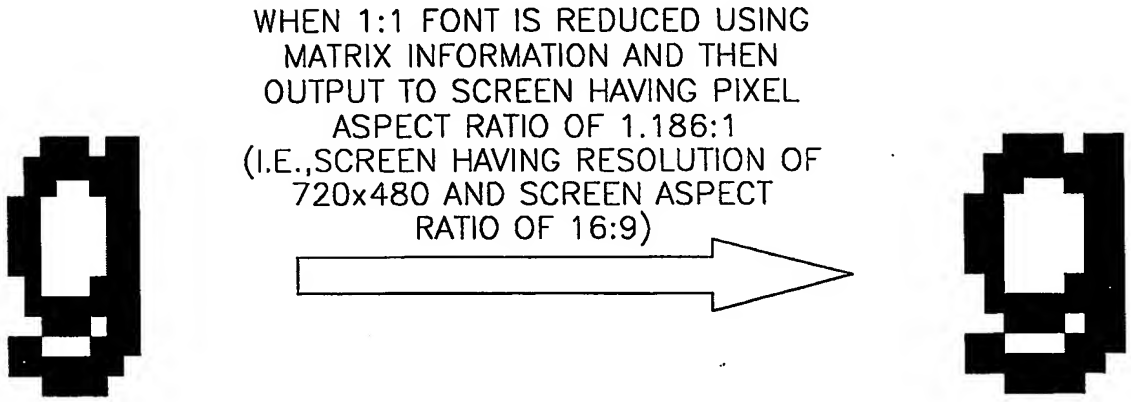

WHEN 1:1 FONT IS REDUCED USING MATRIX INFORMATION AND THEN OUTPUT TO SCREEN HAVING PIXEL ASPECT RATIO OF 1.186:1 (I.E.,SCREEN HAVING RESOLUTION OF 720x480 AND SCREEN ASPECT RATIO OF 16:9)

FIG. 8A

Chapter 33 Subway Showdown

An instant letter they are nearly on top of each other, rolling up out of a move that is almost a mirrored reflection of other--

FIG. 8B

Chapter 33 Subway Showdown

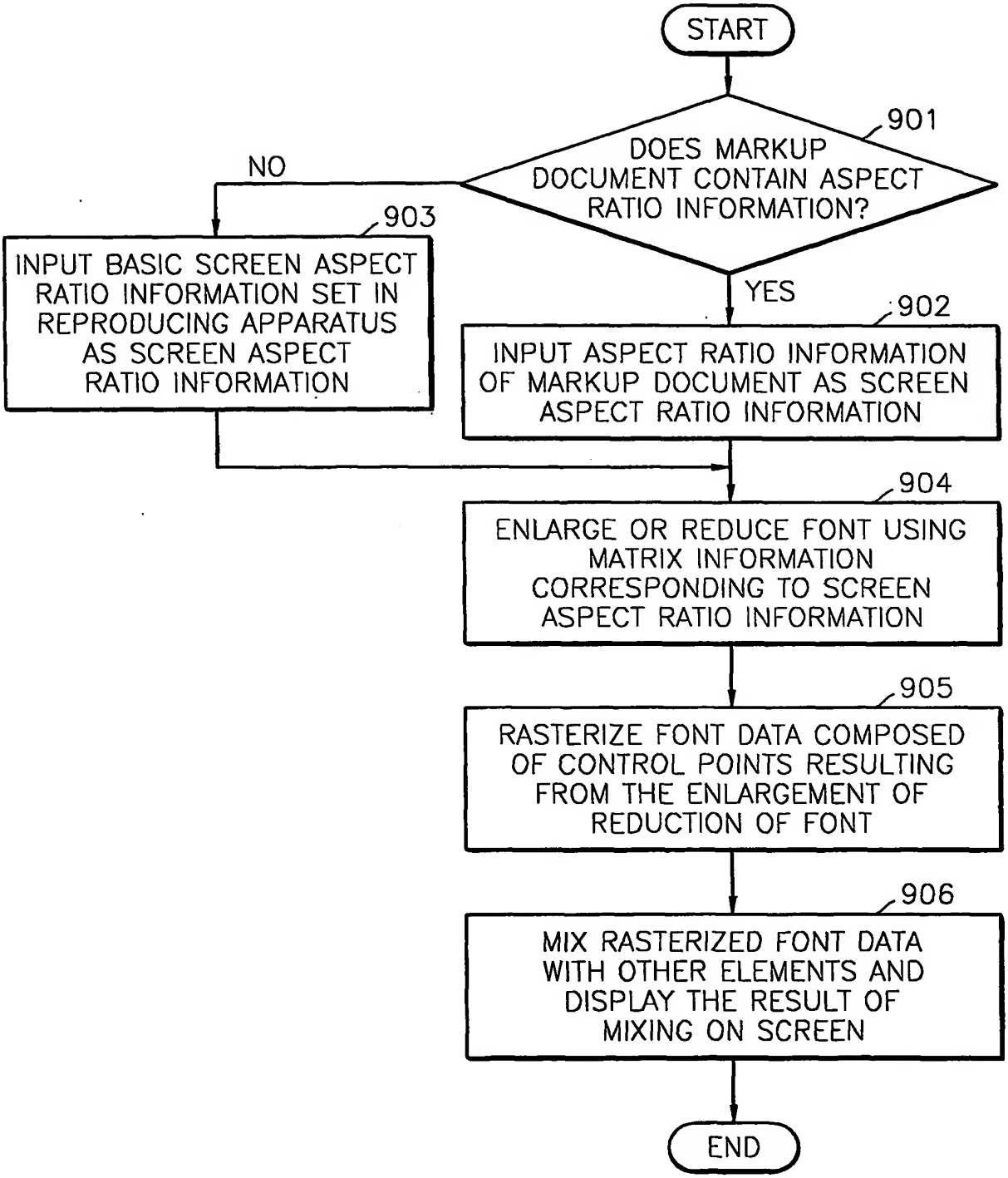
An instant letter they are nearly on top of each other, rolling up out of a move that is almost a mirrored reflection of other--

FIG. 8C

Chapter 33 Subway Showdown

An instant letter they are nearly on top of each other, rolling up out of a move that is almost a mirrored reflection of other--

FIG. 9


START
901
DOES MARKUP DOCUMENT CONTAIN ASPECT RATIO INFORMATION?
NO
YES
903
INPUT BASIC SCREEN ASPECT RATIO INFORMATION SET IN REPRODUCING APPARATUS AS SCREEN ASPECT RATIO INFORMATION
902
INPUT ASPECT RATIO INFORMATION OF MARKUP DOCUMENT AS SCREEN ASPECT RATIO INFORMATION
904
ENLARGE OR REDUCE FONT USING MATRIX INFORMATION CORRESPONDING TO SCREEN ASPECT RATIO INFORMATION
905
RASTERIZE FONT DATA COMPOSED OF CONTROL POINTS RESULTING FROM THE ENLARGEMENT OF REDUCTION OF FONT
906
MIX RASTERIZED FONT DATA WITH OTHER ELEMENTS AND DISPLAY THE RESULT OF MIXING ON SCREEN
END